

Lionel Roques

The inside dynamics of traveling waves

One of the main features of reaction-diffusion equations is their exhibition of traveling wave solutions that keep a constant profile. We analyze the evolution of the “inside structure” of these waves and show that it strongly depends on the reaction term in the equation and on the pushed/pulled nature of the waves. Our results, which lead to a new interpretation of the notions of pushed and pulled waves, can be applied to population genetics.